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Mass-produced handmade ceramics

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To Aniket

Love your experiments (as you would an ugly child)

Bruce Mau "An Incomplete Manifesto for Growth"

CONTENTS

ILLUSTRATIONS

Figure Page

CHAPTER 1
THESIS SUMMARY

Over the course of the last 150 years, the ceramics industry has become progressively more automated. Wares are produced with assembly-line perfection and exactitude. With this improved uniformity, personality and a certain uniqueness in the wares have been lost. There is also a lack of innovative design in the American ceramic industry. Many plates sold today are the same in shape with the only difference between them being the screenprinted pattern on their rims. However, amongst small production potters, there resides plenty of uniqueness and excellent ceramic designs, but no direct and easy way to get these designs into the homes of average Americans who do not visit art or craft galleries. Plus, galleries often only sell a narrow range of ceramic styles which are not appealing to everyone and handmade ceramics are usually cost prohibitive to consumers. Somehow, these problems should be solved with one solution.

For this thesis I will try to blend the best of the two worlds of mass-production and handmade into a new way of addressing, designing, making, and marketing handmade ceramics in order to solve the aforementioned problems. While doing this, I will avoid the negative qualities associated with the machined ceramics done at the large ceramic factories. Those wares are produced in impressive numbers, but with no touch of the human hand and in complete sterile uniformity. Instead, I will strive for the positive qualities of handmade work to be in my own pieces; qualities such as uniqueness, warmth, and subtle visual and tactile interest. Concerning this blending of mass-production and handmade, a discussion about these two terms is necessary. Instead of hammering out definitions, there is a need to update current views on the line between mass production and handmade; there is a need to update what can be considered handmade. Right now one common definition of handmade is work that is made by a potter at a wheel. This definition is thousands of years old and is the most typical and ancient idea of handmade work. It is still valid, but there is room within the notion of 'handmade' for other processes to fit. Others believe that there are types of slipcast wares that are handmade. They believe that since the original was handmade, and each additional piece was hand poured in the mold, then the work is handmade. This is also

true, since this process is a far cry from the assembly line of machines at a true factory of mass produced pottery. Overall, the ceramic community and industry need to rethink the idea of "handmade" and update the processes and the accessibility of handmade ceramics. Instead of strict definitions of "mass-produced" and "handmade," in this thesis, these terms should be thought as two end points on a continuum. This spectrum concept helps to explain the middle ground found by blending positive qualities of mass-produced and handmade wares.

Components of Thesis

This thesis covers three areas. First is the design of my ceramic wares. Obviously, this section is important because of the current need for well designed ceramics. In my research, I have seen what traditional china companies make and what studio potters can do. Corresponding to that research, I have attempted to design forms that show the imaginative possibilities of clay while still being easily recognizable as a functional piece of dinnerware. My goal for the design aspect of this thesis is that ceramics corporations will see these forms and realize the potential of clay and begin producing more updated and innovative shapes.

Following design, this project concentrates on the efficient manufacture of handmade ceramic pieces. I will attempt to find processes that enable people to make handmade pottery quickly, while still having the spontaneities and idiosyncrasies found in handmade goods. The process found will produce quality wares inexpensively in order for the product to be both financially accessible to more potential buyers and competitive with factory produced wares. I am concentrating on finding production methods that are time efficient and production methods that could be helpful to factories or production potters wanting more personable, less static, wares.

Finally, this thesis will cover the marketing of the produced wares. Often makers of handmade ceramics attempt to enter the marketplace without a cohesive and unified marketing plan, which any marketing specialist will tell you is a recipe for failure. In order to avoid this common pitfall, serious consideration will be placed on the presentation of the produced wares to the marketplace. I will take the designer's

approach and treat handmade pottery as any other product, discussing its price, target market and user benefits.

Necessity of Thesis

This idea is worthy of a thesis for several reasons. The first reasons are the current lack of innovative design in mass-produced ceramics and the rarity of handmade ceramics in the marketplace today. These two problems can be solved by simply introducing mass-produced, handmade ceramics. In regards to the design problems, members of the ceramic industry even publicly state that "[n]ow, at least in England, there is an admitted need for innovation in both the design and the marketing of ceramic goods"(Ceramics Industry Forum 2002, 1). The American ceramic industry has confirmed: "The ceramic industry in America is sick. [It has] low profits and much foreign competition, and it's because of failure on the design level," (McDevitt 1964, 14). What better way to revitalize the industry and the ceramic marketplace than to demonstrate the possibilities of handmade ceramics.

The second reason why this thesis needs to be done is the current public interest in casual, handmade goods including handmade pottery (China and Pottery on the Upswing 1998, 47). As one gallery owner put it:

> There is appeal in the endless variations to be found in things made by hand. A set of wheel-thrown porcelain bowls is guaranteed to vary in size. The glazes will differ from piece to piece, depending upon where things were placed in the kiln during firing.... What we think of as flaws in ware produced under strict factory control may be viewed as desirable when the object is made by an artist. Collectors don't simply forgive such inconsistencies. They actively enjoy them. The accent on individuality, which collectors appreciate and use so deftly, clearly begins with the maker. (Farber-Issacson 1992, 13)

This seems to suggest that at least some members of the public are ready for more handmade dinnerware, and that there may be hope for other consumers to join them.

Ever since Russel Wright introduced his casual line of American Modern dinnerware in 1939, tableware in America has become steadily more laid-back. Consumers have reiterated this trend by buying less and less fine china. In fact now, "Pfaltzgraff has even placed sole emphasis on casualware by discontinuing formal patterns altogether," (China and Pottery on the Upswing 1998, 47). Demographic

research has further shown that consumers are beginning to see tableware as a sort of fashion accessory and will buy a few pieces for temporary use. As *Ceramic Industry* reports, "[t]he proliferation of earthenware patterns in the casual market has bolstered the trend to replaceable dinnerware," (China and Pottery on the Upswing 1998, 47). One way that I see to capitalize on this consumer trend is to introduce more stylish and affordable handmade tableware to buyers.

There are also personal drives necessitating the completion of this thesis. First, I have a desire to influence the sluggish ceramics industry in America. After looking at the product lines of many of the top manufacturers, I have found few designs that could be classified as exciting or even noteworthy. I believe that putting some of the positive qualities of handmade ceramics into mass-produced goods will help this. I also have the desire to promote handmade crafts as a more valued medium. Much of the handmade ceramics sold at craft fairs are not indicative of the originality, style and quality possible. By showing more consumers what handcrafted ceramics can be, more people will believe that the medium is worthy of praise and attention.

Goals

I will be exploring the possibility of handmade mass-produced ceramics in America today with several goals in mind. The first is to design uncommon tabletop ceramics that can, at the very least, show current ceramic manufacturers what can be done in this genre. Another is to find efficient ways of hand producing ceramics so that the endeavor can be financially feasible. Associated with this is the goal of making handmade ceramics affordable for the public, most likely through the efficient production methods. Other important goals of these designs are to give consumers more of a choice when buying dinnerware, to make ceramics that appeal to 20-30 year olds, and to make the ceramics industry more design driven. In the end, I have great hopes for the final outcome of this thesis. My goal for the future is to have well designed handmade ceramics commonplace. Fresh college grads or newlyweds will visit stores that sell such ceramics just as they now visit inexpensive IKEA stores for their furniture.

Limitations

Clearly, it would be impossible to cover every aspect of ceramic production in any thesis. For thousands of years, people have spent lifetimes investigating the realm of designing and making ceramics. I have had to forego many intriguing areas in my own efforts to study ceramic design, manufacture and marketing. For example, this project makes no attempt at dealing with possible new materials that could spark new manufacturing processes. Likewise, this thesis does not cover any possible new firing methods and any associated energy (and therefore money) saving procedures. These are two examples of areas that could be researched by future students of ceramic design.

CHAPTER 2
BACKGROUND OF PRODUCTION METHODS

The Handmade-to-Machine-Made Continuum

As previously mentioned, handmade and mass-produced are two end points on a continuum. This continuum can be seen both as a process that happened over time and as a concept which aids the classification of ceramics today.

Throughout the course of the history of ceramic production, there has been a steady movement away from human labor and towards the exclusive use of machines. Ceramics in America has had a particularly difficult past. From the 1800s when American potteries were competing heavily against cheaper wares from Europe, to the 1960s when plastics introduced themselves as a threat, American manufacturers have had their work cut out for them. In the early days of the 19th century, there were rural potteries scattered across the countryside with a few urban manufacturing plants. As the industry matured, the smaller potteries could not compete and eventually, the larger firms made the vast majority of the American wares used in the states. In the early 20th century, hand production fell out of practice in the larger producers of ceramics due to cost and the steady improvement of press molding, jiggering and slip casting (Reed 1997, 27). Now today, with even more efficient machines in ceramic factories the spectrum between this industry ware and the pottery made by modern studio potters spreads.

This spectrum exists conceptually as well. In my quest to avoid machined ceramics and to promote the mass-production of handmade ceramics, I realized that there is no definite line separating the two into distinct concepts. The idea of a continuum between the two concepts helps to explain the gray area that results from attempting to blend the two. Innumerable essays have been published where writers give their own opinionated definitions of what can and cannot be considered handmade. Some people feel that any use of molds violates the spirit of handmade ceramics, whereas others hold more liberal views (Krakowski 2002, 10; Rashid 2002). Instead of determining my own definitions for these two terms, meanings that would be refuted and debated by others, it is best to acknowledge the qualities associated with the notion of "handmade" and the notion of "mass-produced." Then, one can place ceramics at an appropriate point on the continuum based on the production method and the degree to which the pieces have

certain qualities like uniformity and sterility. This idea will be demonstrated in the discussion of my three case studies of ceramic producers.

Current Processes in Use

In the field of mass produced ceramics, there are a variety of ways to make pieces quickly. The three main means of production are wheel throwing, jiggering, and casting.

Wheel Throwing

The first, and most labor intensive way, is to make pieces on a potters wheel. Using experienced craftpersons, a significant amount of work can be made using this ancient method. However, in the US, this method of production has fallen out of favor with companies due to increasing costs of skilled labor and the advent of more precise and fast means of production. In developing countries, this method is still viable due to the cheapness of skilled laborers. Using inexpensive foreign labor and importing the goods to the US is an option which is becoming increasingly popular for companies and designers desiring their products to have a handmade "look." Considering the array of other manufacturing options available today, it seems arcane to me to settle for the slow rate of production and limited shape range associated with wheel throwing.

Jiggering

Another method popular in mass produced ceramics is using a jigger (also known as a jolley). A jigger can be as simple as a wooden template used by a potter, or as precise as a huge machine with sliding blades shaping five plates simultaneously. The basic premise of jiggering is that the clay is shaped by being pressed between a spinning plaster form and a template, usually attached to a lever. The most attractive aspect of jiggering is that the plaster bats that are used to form half of the shape of the piece do not become saturated with water, therefore allowing them to be reused many times throughout the day. As enticing as this option seems, I did not have my own wheel on to which I could build the structure necessary for jiggering. However, this way of production could be further explored in relation to this thesis in the future.

Casting

Casting ceramics is currently the most popular and widely used method of mass ceramics production. According in one knowledgeable source, a remarkable "90 percent of industrial ceramics are cast," (Axel 1981, 164). This heading encompasses such varied processes as hand press molding, hydraulic and RAM press molding, slip casting, pressure casting, and powder casting. These methods give a company the opportunity to exclusively use machines in their production and take out any possible human error. The basic premise of casting ceramics is to have some sort negative space into which clay, in some state, is forced, causing the clay to take on a shape.

Press Molding

Press molding by hand is a process currently more favored by studio potters than production factories since it involves great human involvement. The clay used is in a pliable state and it is rolled into a sheet of a desired thickness and pressed into a plaster cavity or slumped over a plaster hump. The plaster draws the moisture out of the clay, making it firm enough for the piece to be removed from the plaster without distorting the shape. With a significant number of plaster molds, a high number of ceramic pieces can be made in the course of production, for while some pieces are drying on the plaster, more can be made. However, this method also allows for great variation between each piece. Even with half of the form being strictly dictated by the shape of the plaster mold, each person coaxing the clay slab into the plaster may do so differently, causing potentially extreme variations in the pieces. Correspondingly, this method also enables the fast production of unique pieces. For these reasons, pressmolding seemed the most tempting of all the production methods for use in this thesis.

Machine Press Molding

RAM or hydraulic press molding is similar in concept to hand press molding. Clay in a pliable state is pressed between two specially made plaster molds, thereby ensuring uniform pieces. Air is pushed through the special molds, releasing the firm piece. This form of press molding is the most affordable production machine for studio potters, and was the first machine employed by china companies in their move away from

handmade wares. Machine press molding is a great way for a studio or company to make precise and uniform pieces, although there are limitations in the shapes possible using this method (Connell 2002). Machined press molding (and pressure casting, which is described later) are the processes most removed from the concept of handmade. Unsurprisingly, these methods are frequently found in large ceramic manufacturing plants. As efficient as these processes are, their end results are the type of ceramics which this project hopes to avoid.

Slip Casting

Almost any shape in the world can be slip casted. Slip casting can be done by one person and a bucket of slip, or by a machine in a factory. In this method, liquefied clay is poured into a hollow plaster mold. The plaster leeches away moisture from the slip so that the slip touching the plaster becomes firm. After a certain length of time, the remaining slip is poured out and what is left is a thin, hollow shell of clay forming the ceramic piece, or, if the hollow space is thin like a plate, there is little remaining slip and the piece is solid. This method enables a high number of exact replicas to be churned out, as long as a person or company has a high number of plaster molds. This was the most popular method of production for china companies for centuries, but several factors are contributing to the demise of this method. First, the production of the multitudes of plaster molds is time consuming and costly for both studio potters and large companies. Secondly, the plaster molds wear out, causing the need for even more to be made. Thirdly, this method is not time efficient. Each piece spends a long time drying in the mold before it is possible to remove it without destroying it and, the plaster mold is saturated with water, which takes more time to dry out. Finally, all of these problems are erased by the newer technologies. I wanted to try this method from a standpoint of experimentation. However, I knew from the beginning that this process would not be possible for me to undertake from the standpoint of seriously producing wares. The long start-up time (for manufacturing of multiple molds) would prohibit me from using this process for this thesis. Furthermore, the results of slipcasting are generally very uniform and sterile, like machine casting. I thought that there might be ways of introducing handmade elements into the slipcasting process, but as I discuss later, that was not to be.

Pressure Casting

The most recent advancement in ceramic manufacturing technology is pressure casting. This method is one of the few new things to happen in the ceramic industry. It is similar in concept to injection molded plastic: slip is pumped into a machine and pressed against a special plastic mold on all sides at a great pressure (1600 tons). In powder casting, the method is the same, but the clay used is in a dry form (powder) with only 8% water, thereby speeding production by deleting the drying time necessary for damp greenware (Lanno 2002). These methods are fast, efficient, precise, and as far away from handmade as possible. They were first explored by ceramic engineers making small and very technical ceramic parts, but now, German companies are making them feasible for tableware manufacturers (Lanno 2002). In fact, thanks to these European companies, it is now possible to produce ceramic tableware that comes out of the kiln never touched by human hands.

Fig. 1. Pressure Casting

Case Studies

In an effort to learn how things are done in the "real world," I looked closely at three separate levels of ceramic production, at different points on the handmade/mass-produced continuum. The first level was that of a studio ceramist named Curtis Benzle who had a few employees helping him produce his wares. Next in line was MacKenzie-Childs, a company of 240 employees priding itself on the handmade quality of their wares. The last was Syracuse China, a 130 year old company manufacturing uniform and sturdy restaurant grade wares. From these different standpoints, I was able to learn about various manufacturing techniques and later be able to place my own work in the spectrum of handmade mass-produced ceramics.

Curtis Benzle

When I explained by thesis project of mass-producing handmade ceramics Curtis Benzle replied simply, "Yeah, that's what I do." Since graduating from RIT with a MFA in glass in 1971, Benzle has been producing a variety of ceramic giftware from his suburban Ohio studio.

At most, Benzle had thirty employees working for him in his studio. At that point he was making hundreds of pieces a day, depending on the complexity of the pieces. His pieces included nightlights, "message hearts" and small clocks, as well as more complex pieces such as large scale wall sconces and jewelry Benzle stresses the importance of having both high-end and inexpensive items in one's line of production pieces. The production processes Benzle used included a lot of pressmolding and secret proprietary processes he is loathe to tell. He received most of his income and orders from attending trade shows, which he considers to be the best way for ceramists to enter the industry. "There is no better way to meet so many galleries and shops," he says. Currently, Benzle has drastically scaled down his production in order to concentrate more on teaching and making his one-of-a-kind ceramic sculpture pieces (Benzle 2003).

As pedestrian as his wares are, they do keep him financially afloat and permit him to explore more high-brow art works. Benzle states that his main customers of these nightlights and message hearts are middle-aged professional women: nurses, school teachers, etc. As inspired I am by his production levels and his ability to market his

goods, I would instead try to appeal to a younger, trendier audience by making more fashionable and innovative goods.

Fig. 2 Benzle's Message Hearts

Fig. 3. Benzle's Personal Work

MacKenzie-Childs

MacKenzie-Childs began as the work of two potters, Victoria and Richard MacKenzie-Child. After attending trade shows, they began getting large orders from large upscale stores such as Neiman Marcus and consequently began hiring more employees to make their pieces "by hand." Today the factory in Aurora, New York is home to 240 employees, including a design staff of ten, producing their distinctive, highly decorated earthenware pots and wooden furniture (Connell 2002).

Three types of ceramic manufacturing are used at MacKenzie-Childs: handpressing slabs into plaster molds, slipcasting, and hydraulic pressure casting. Experienced workers handpressing slabs into molds can make fifty to ninety pieces in an eight hour day, depending on the size and complexity of the piece. At MacKenzie-Childs, handpressing is reserved mainly for oval plates and platters. A variety of pieces are made using slipcasting: anything from salt and pepper shakers, to teapots, to three-foot tall bulbous table legs. According to the slipcasting specialists, the slip is left in the mold from anywhere between five to twenty minutes, depending on how thick the walls of the finished piece need to be. Because the slipcasting process drenches the plaster molds, MacKenzie-Childs is lucky if they are able to use the same mold twice in a day. Often, the molds can only be used once, and need to dry overnight before using again. The most technologically advanced machine MacKenzie-Childs uses is a solitary hydraulic press, operated by one bored man, mainly used for pressing out identical shallow plates and bowls. While hydraulic pressing can produce a lot of wares in a day,

the main problem with this method according to MacKenzie-Childs is the fact that the molds used in the machine wear out very quickly. Hydraulic press molds are replaced almost bi-weekly whereas the slipcast molds are replaced every three to six months, and handpressing molds last a year. Clearly, the remaking of molds for this machine would be an added cost for any company (Connell 2002).

After bisque firing, the pieces are subjected to an intensive decorating process which is the stylistic core of the brand. Each and every piece is heavily decorated by women with underglazes and colorants. Some pieces are further decorated with decals and gold lusters, adding to the hours spent on each piece, and the number of times those pieces are fired. Finally, the pottery is finished and sold in various MacKenzie-Childs flagship stores and in boutiques across the country, such as Parkleigh in Rochester, New York (Connell 2002).

After touring the factory, I talked with a designer for MacKenzie-Childs. After seeing how the pots are made, I asked her if they consider their wares handmade. She answered that they definitely do- even the ones made with the hydraulic press- because they are all painted by hand. I had some problems with this assertion; problems that eventually grew into the strong belief that the form of the pot must be hand done for it to be considered handmade. Sloppy surface decoration alone does not make a pot handmade. Instead, I attach greater importance to using the hand to actually shape the clay. Coming from a background in linguistics, I am compelled to break the word down semantically: the piece must be literally made-by-hand. "Made" covers the process from raw clay to the shape of a bowl or plate, "hand" describes the object which does the shaping. Perhaps MacKenzie-Childs is confused and means to use the phrase "hand-*painted*." Describing their machine-pressed pieces that way would be more truthful.

Another production problem I noted at MacKenzie-Childs is their careless quality controls. On one hand, they welcome variation in decoration and shape in order to further assert their handmade-ness. On the other hand, the variations are great enough for the public to think that they are flaws in the work, which in many cases they are. Off-kilter decorations, dimpled glazes and dented rims and feet all may add to the "charm" of the work, but they also distract and subtract from the overall cohesiveness of a set of dinnerware. The final problem I have with MacKenzie-Childs is their high pricing. They

claim that the high pricing is necessary because of all the labor that goes into each piece. This would be a valid reason if the labor put into the work achieved a high quality result. Unfortunately, the status now is that people with money to burn are paying extravagant prices for carelessly done pottery.

Overall, I commend MacKenzie-Childs for their valiant effort in mass-producing handmade ceramics, but with serious reservations. Refined quality and reasonable pricing would be a great improvement.

Fig. 4. MacKenzie-Childs' Torquay Medium Plate
Made by hydraulic pressing; 9.25" x 9.25"
$80

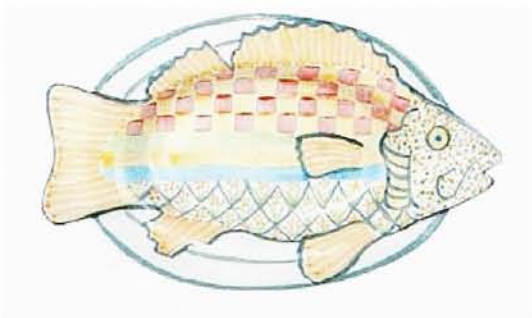

Fig. 5. Dinner Fish Platter
Made by handpressing; 15.5" x 8.5"
$50

Fig. 6. Honeymoon Teapot
Made by slipcasting; 12" x 8.5"
$225

Syracuse China

The least handmade ceramics I studied were those made by Syracuse China, a subsidiary of Libbey Inc., located in Syracuse, New York. The company began in 1871 and since then, it has almost exclusively produced wares for hotels, restaurants and the railway system. Today the best place to see Syracuse China is on the tables of Red Lobster and Olive Garden (Lanno 2002).

Like MacKenzie-Childs, Syracuse China uses a variety of production methods for their pieces. One method is the use of a machined jigger with moving metal shapers that presses out plates at a rate of one hundred dozen an hour. Another method in use is pressure casting using slip in simple two part mold. This method yields only seventy-five pieces an hour. The most ancient technology in use at Syracuse China is slipcasting, which they use for teacup handles. In fact, those handles are still attached to the jiggered cups by hand. Also done by people is the smoothing of flash marks on pressure casted wares; work that is completed by carefully trained workers using knives and sponges.

Syracuse China is beginning a new single-firing manufacturing process that they say results in less breakage during manufacture and saves both time and energy. This new process eliminates the bisque firing and simply glazes the greenware, thereby decreasing the time pieces spend in production. In the future Syracuse hopes to have a dry pressing manufacturing system set up, a project they predict will be installed within ten to fifteen years. Despite its expensive start up costs, such a system will produce pieces even faster and involve almost no human interaction with the wares (Lanno 2002).

Like most of the manufacturing, the decorating at Syracuse China is also automated. One type of machine they use simply paints stripes and bands onto pieces. Another type of machine is more interesting and uses heat-release technology. A soft rubber balloon lowers itself onto a screenprinted decal picking it up, then moves over to the waiting plate, lowering itself again and transferring the decal onto the plate. Unlike MacKenzie-Childs, the decorating process is fast and uniform (Lanno 2002).

Despite the comparatively high production yields and the automated machinery, Syracuse China still considers itself to have too much human involvement. The company aspires to be as automated as many German and British china factories which use robots to attach handles to cups and dry pressing machines. However, for the purposes of this thesis the manufacturing processes at Syracuse China make it firmly entrenched in realm of mass-production. In fact, it is precisely the type of wares made by Syracuse China that this thesis wants to avoid. While perfectly machined and uniform china will always have a market, consumers should also be aware of and offered handmade alternatives.

Fig. 7. Syracuse China *My Signature*

Fig. 8. Syracuse China Hotel Ware

My Niche in the Spectrum

After visiting and talking with these ceramic manufacturers, I was better prepared to correctly place my pieces in the spectrum between handmade and mass-produced. During this thesis, I was not even at the production level of Curtis Benzle due to the fact I was still working out processes and had no employees. So, for this project I was definitely in the handmade side of the spectrum. However, my eventual goal for my work and for the processes outlined in this thesis is to be more along the lines of MacKenzie-Childs in its accessibility: distributing my wares across the country in hundreds of gift shops and craft galleries would be an achievement. I would then improve upon MacKenzie-Childs by lowering the prices of my handmade goods and improving the quality and style. Also, I would not use a hydraulic press machine as

MacKenzie-Childs does. Because I want to avoid that sort of exact uniformity, I would avoid all machines and instead rely on the efficiency of my simple processes to produce wares quickly. That way, I can continue to make a lot of truly handmade wares.

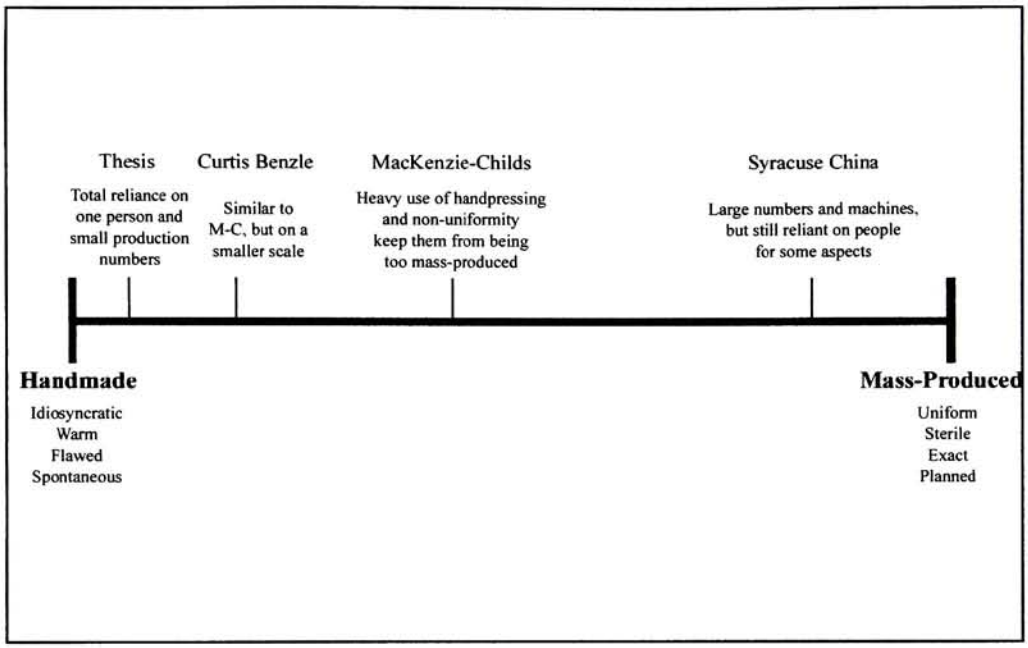

Fig. 9. The Handmade-to-Mass-Produced Continuum

CHAPTER 3
DESIGN DEVELOPMENT PROCESS

The design of the ceramic pieces for this thesis was critical since I placed great importance on the innovative qualities of my designs. I began with a broad sense of the type of wares I would like to produce as defined in my design rationale. I made criteria for my designs to meet before being made in quantity. Then I started a period of two-dimensional and three-dimensional sketching after which I chose the designs that best met my criteria. Finally, I began the production stage where I experimented with different methods to find the most efficient ways of making the designs chosen. At the end, I had a substantial number of well designed, innovative, and hand crafted ceramics pieces which needed to be effectively marketed.

Design Rationale

The designs for this project had to fulfill three main criteria. The first was to stay far away from the typical craft look. For example, I wanted to show that handmade does not have to mean kitsch and it does not have to look out of place in modern, contemporary homes. In many craft galleries and craft fairs, the public generally sees a repetitive style of craft pottery filled with cliched shapes and drippy glazes. For many, this is the only exposure they have to handmade ceramics. I wanted a design for my tableware that showed consumers and industry that handmade can be very 'cool.' Accordingly, the pieces needed to look innovative; they needed to be forms and surfaces I had not seen a thousand times before. However, I also kept in mind the fact that "it is now virtually impossible to be totally original in making pottery vessels. Nuances of shape, combinations of color, styles of decoration, and the relationship between these elements are the principle areas that offer the greatest scope for innovation," (Lane 1998, 8). Because of this, the eventual hand done eccentricities of my pieces came into play when considering the innovative qualities of my designs.

Another important aspect that my design needed to fulfill was simplicity in form. In order to accommodate easy, rapid production as well as my novice mold-making skills, I needed to design minimalist shapes. Another positive result of simple shapes beyond fast production is that such forms allow greater variation to show. If the form is

too structured or too complex, the variations that are the results of hand production can look like mistakes and flaws. On the other hand, if the shape is simple, then the variations will give the piece visual interest and they will be more likely to be considered positively.

The final and possibly most important aspect of the design was that not only must it be able to properly showcase variations, it must in fact invite them. In fact, I needed to almost design the opportunities for variation into the final pieces beforehand, since they were so important to my goal of introducing more variation in mass-produced pieces. One way I considered doing that was by incorporating the variation within the casting process. Through research and experimentation, I found that there are several points in the process that allow entry for irregularities. Some of these points are shown in the following chart made during the process of designing for this project.

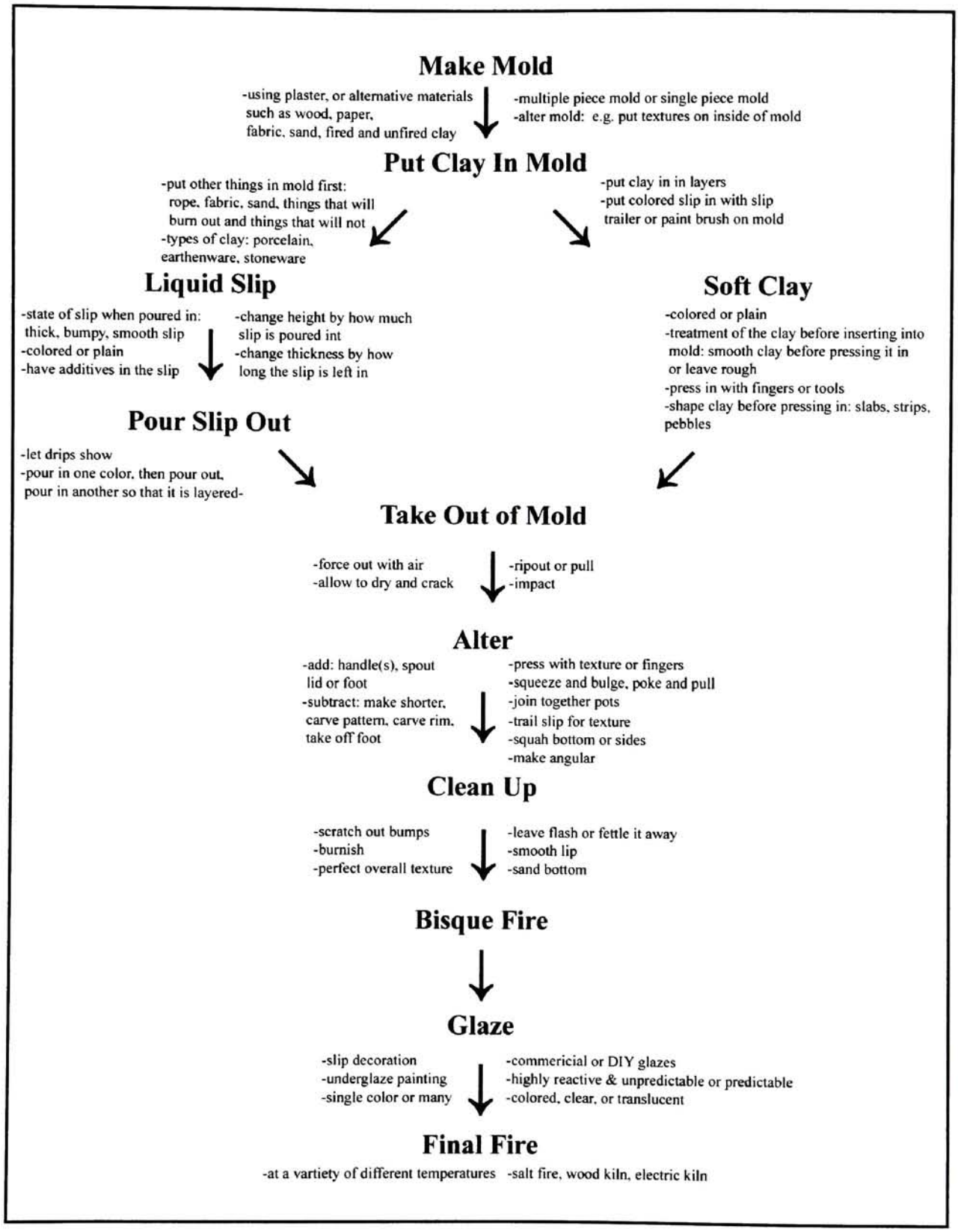

Fig. 10. Opportunities for Variation

Another way I tried to introduce variation was by doing the variation separately, afterwards, by hand in order to show some intent on the part of the maker to impart their style, hand, and physicality. Using this method, it would be assured that each piece be different since in a production setting, there would be many employees finishing the pieces in their own idiosyncratic ways. However, I wanted there to be a reason why the makers had to touch the pot, perhaps something in the design of the piece or in the mold would force this human attention. My eventual answer to this dilemma is discussed in the next chapter on production methods. Ultimately, a combination of all these design criteria were incorporated into the final products.

Design Process

The course of my design process followed a predictable route. First, several weeks were spent sketching, both two-dimensionally and three-dimensionally in clay. In fact, sketching new ideas continued into the manufacturing process. During this process I came up with a variety of shapes. I began by sketching the most obvious solution to my thesis problem: pots that are literally hand-shaped. However, this line of thought was quickly dropped due to its obviousness.

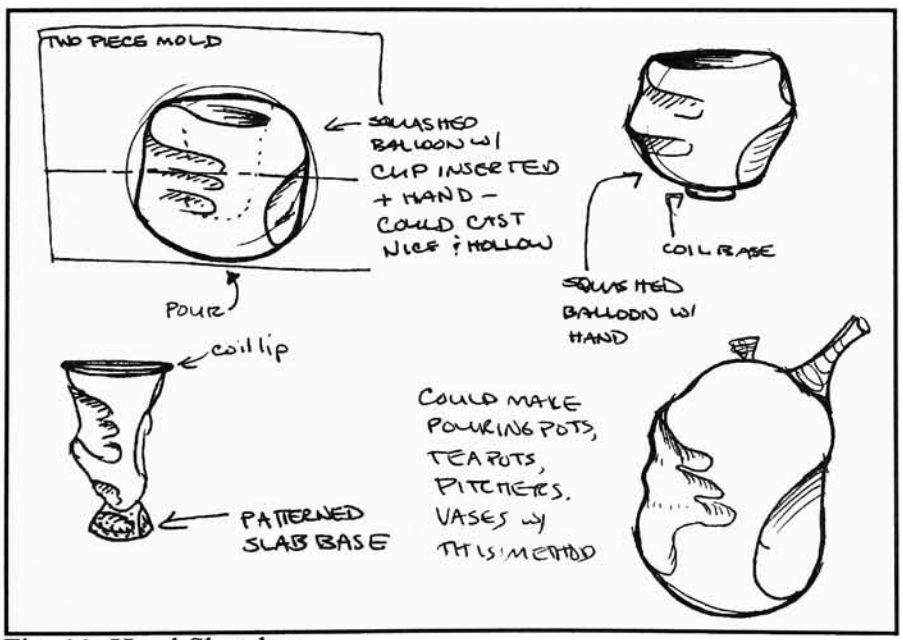

Fig. 11. Hand Sketches

Then came the softened cone shape which provided a lot of variety in functions. With one mold, I could make a cup, a goblet, a small jar and condiment shakers.

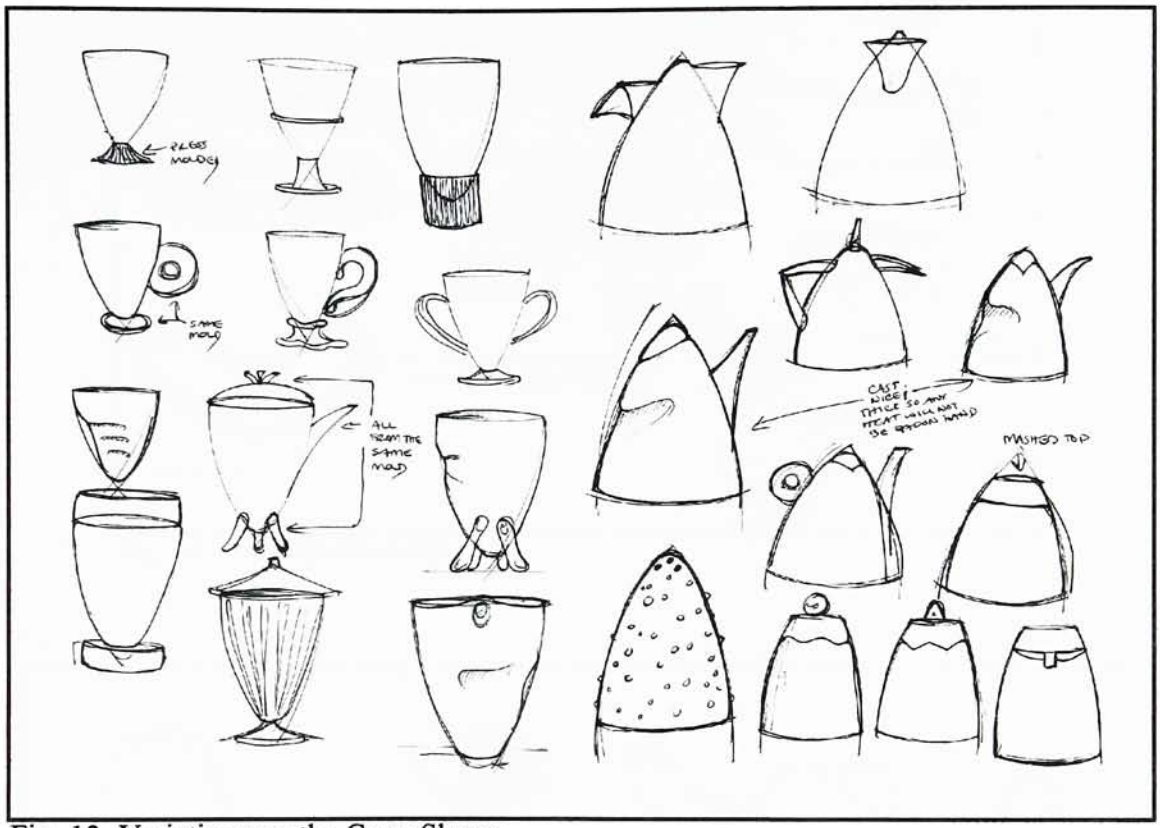

Fig. 12. Variations on the Cone Shape

Then, a shape I had been pursuing for some time appeared in my sketches: plates with extremely bulbous rims and bowls like dented balloons. These shapes were revisited and revised repeatedly throughout the ideation process.

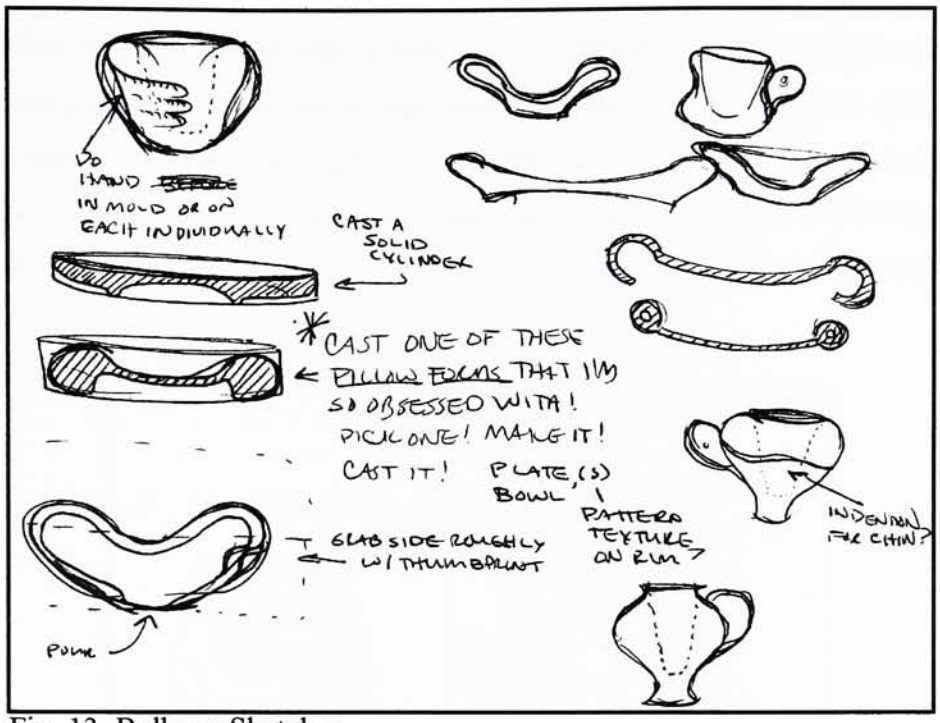

Fig. 13. Bulbous Sketches

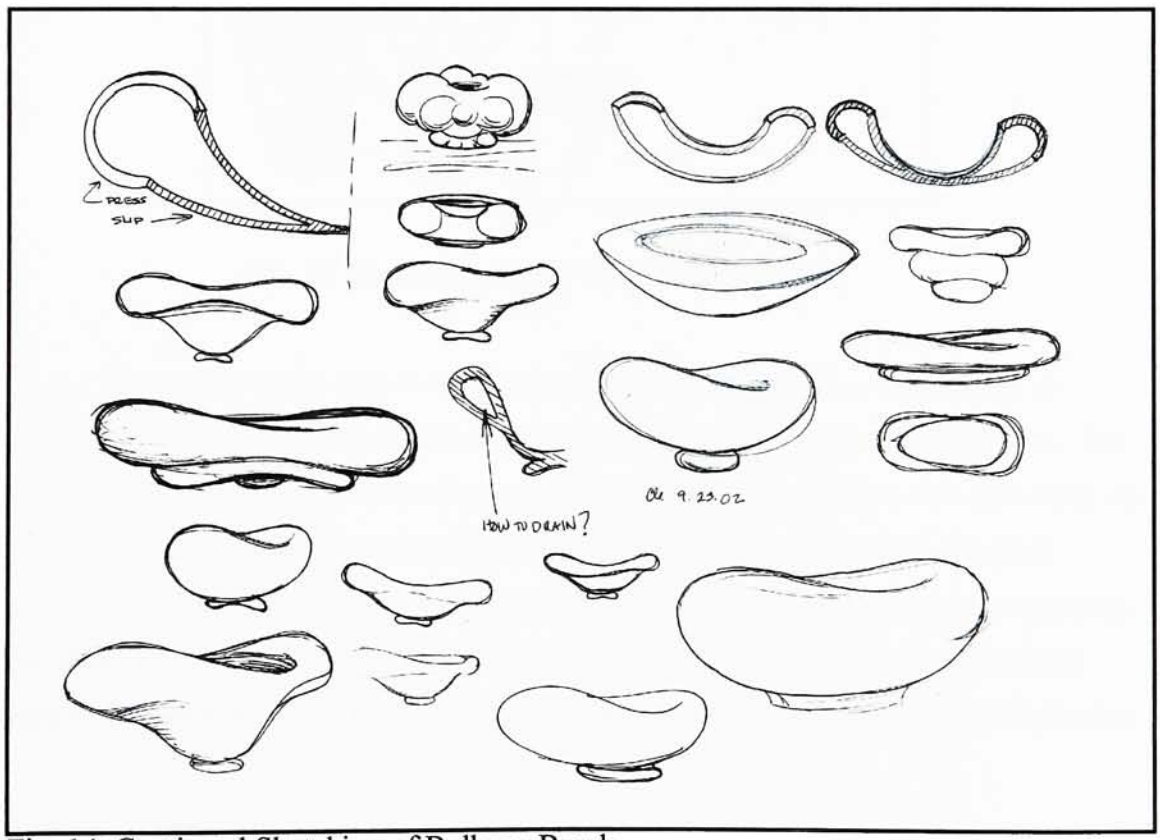

Fig. 14. Continued Sketching of Bulbous Bowls

Next came my idea to make a multi-piece mold which would facilitate variety in the finished pieces. My plan was to make several simple molds, carve each one in a different pattern, and then slice each mold into interchangeable sections. The parts could be rejoined in a number of different combinations producing a variety of different pieces. I worked on possible shapes to use in this process before the idea was dropped due to comments about it being "gimmicky."

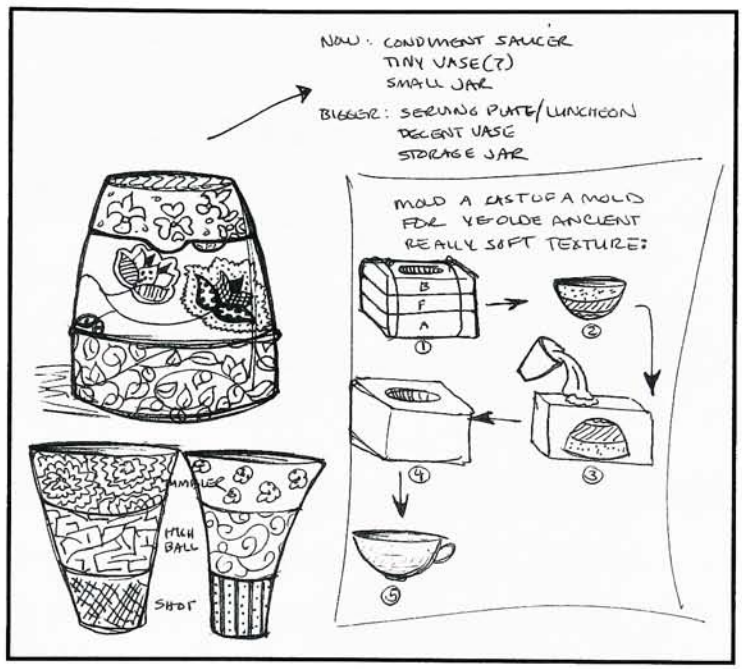

Fig. 15. Sketch of a Multi-Piece Textured Mold

The next coherent idea to come out of the sketching was to cast a variety of separate clay pieces that I could join together in different ways to provide variation. For example, I would have a variety of bottoms and a selection of different tops that could all be joined together. One way of doing this was to make pieces that could somehow interlock with traditional mechanical joints like notches, teeth, tabs and slots, or grooves. However, considering the sometimes imprecise nature of clay, I did not believe these ideas to be feasible. Then, I began to think of casting parts that would overlap each other

and be joined by crimping. Finally, I considered casting parts with thick lips on them that could be joined by crimping another band of clay over them, threading a coil of clay through them, or by some other obvious joining method. Once I decided to continue with this line, I then began a series of sketches to determine what shapes should be made.

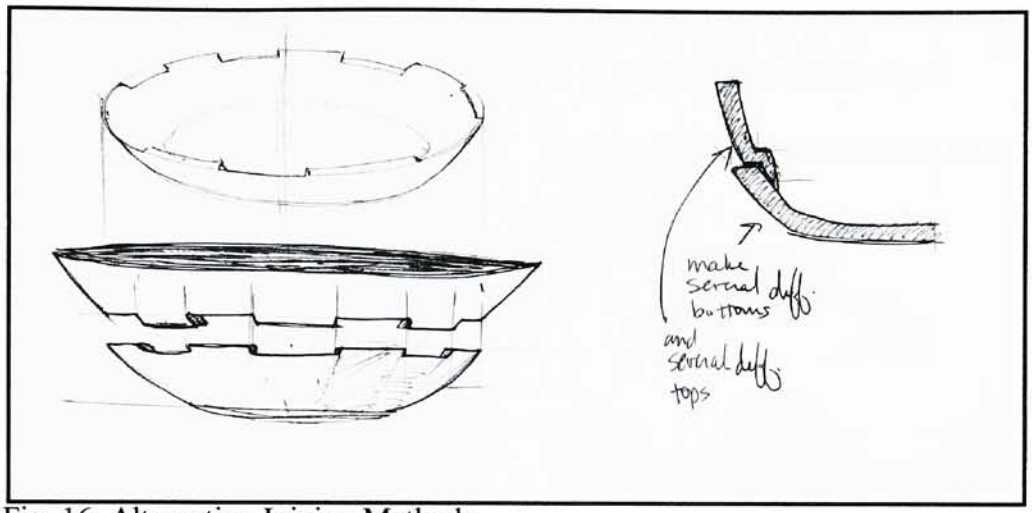

Fig. 16. Alternative Joining Methods

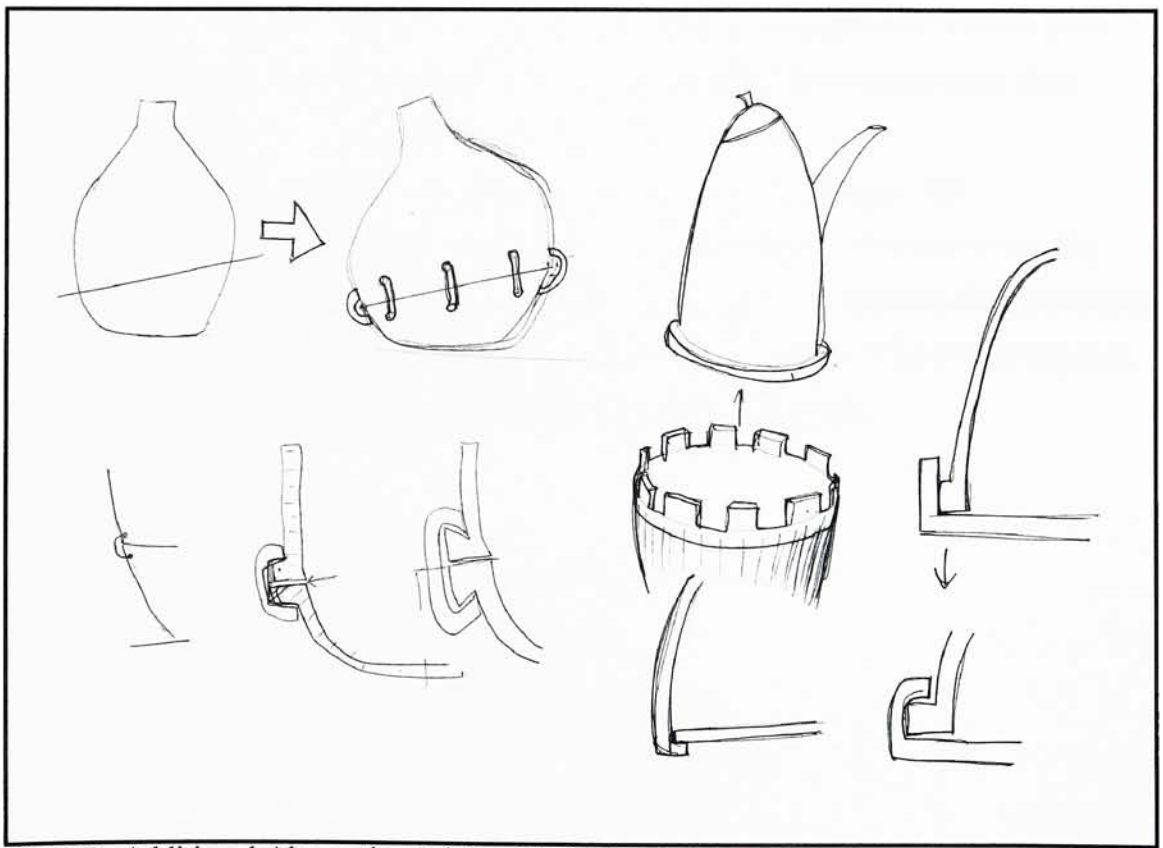

Fig. 17. Additional Alternative Joining Methods

Concurrent with this sketching, I began making prototypes. To do this, I first had to choose from the sketches the most appealing shapes which met my previously stated qualifications. Being the most promising and easiest to make, I first made solid softened cones on the wheel. Then, I began making a variety of solid and bulbous plates and bowls. While I formed some of the designs directly from the sketches, I also invited other ideas to influence the shapes while making the prototypes on the wheel.

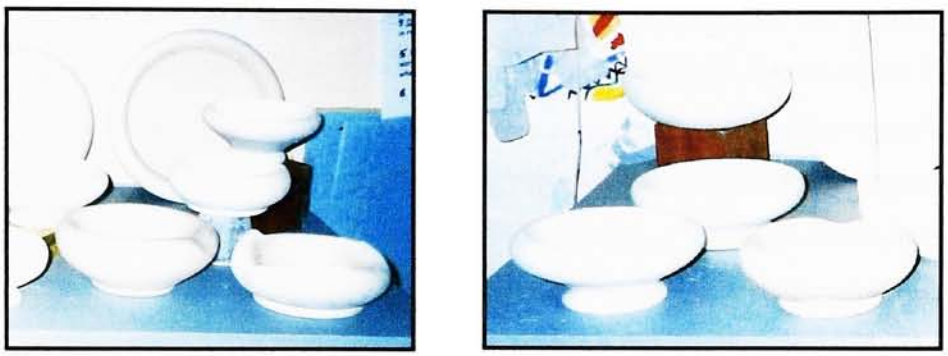

Fig. 18. Solid Clay Prototypes

Finally, I made a variety of shapes for the interlocking parts idea. I made three types of "bottoms:" extremely shallow bowls, one mid-sized bowl and a large, deep bowl. I also fabricated a selection of tops to be cast in plaster.

In the end, not only did my particular criteria direct my designs, but experimentation also played an important role in the final shapes. Whether it was the result of imperfectly translating a sketch to a pot on the wheel or allowing the spontaneity of wheel-throwing to influence the shape of a prototype, simply working out concepts in three dimensions provided fertile ground for innovative design ideas.

CHAPTER 4
MANUFACTURING PROCESSES

The forms chosen to be reproduced and the methods for production are two closely connected areas of this thesis. As shown through my design process, I developed a group of pieces that could be reproduced. In order to narrow the options down, I had to determine which shapes would best be made using the production methods I had chosen: moldmaking, slip casting and pressmolding. Considering the slant of this project, it was of great importance to find the most efficient production methods that combine the best aspects of handmade pottery and mass-produced wares. Also, I wanted to experiment with the methods most commonly used in industry and find ways to produce handmade pieces within these processes. Quite simply, "Slip casting . . . is the quickest, most accurate and efficient means of forming clay, minimizing costs, and allowing for the greatest possible mass distribution," all important goals for me (Notkin 1978, 2). Furthermore, moldmaking and slipcasting were areas that I had personally been interested in for sometime, yet had never explored.

Predecessors

I had seen a variety of ways craftsmen and artists had already explored handmade avenues within casting and mold making. In 1971 Richard Shaw and Robert Hudson started making slip cast pieces, leaving obvious flash on them. The men "purposely left seams visible (usually smoothed away in industry) so that the process is plainly evident," (Axel 1981, 164). This method would also ensure the individuality of each pot. Another way to add a sense of uniqueness to cast ceramic work was employed by Jacqueline Poncelet. This craftswoman "adopted [casting] in order to produce limited editions of her very supple, unique forms. She casted a set number of pieces- say five to ten- and then destroyed the mold to insure that only a "precious few' of that image exist," (Axel 1981, 168). An added bonus of casting was that it "allows her to make bone china forms with paper-thin walls," (Axel 1981, 168). Master mold maker Richard Notkin also had a method to minimize the sterility of cast pottery. He wrote, "I try to alter each casting in a unique way, or try to join it to other castings or handbuilt elements to create a unique

object. Thus, I can continue to utilize fresh ideas and avoid the "human/factory syndrome,'" (1986, 34). An artist uses molds and casting in another nontraditional way. "He cut strips and slabs of plaster with a jigsaw into numerous irregular shapes. They were then assembled into enormously complex volumetric forms, all parts held together with many clamps, and then cast. Because of their complex construction (Which could never be exactly repeated) and variety of the elements' shapes, there was no duplication of form," (Axel 1981, 174). If one is looking for simple variation in their cast outcomes, this would be an interesting, if not exasperating, way to do it. However, I was looking for a more specific type of variation, something more human, touchable and inviting. I found an article of great interest which outlined a designer's method of producing a dinnerware line for a hotel restaurant. The majority of the wares were machined cast, but others were handmade, or altered with hands in order to give each piece a "very individual character," (Jorghensen 2000, 36). Specifically the designer writes that a small plate "would have a thumbprint impressed in the clay during the making, resulting in a tactile feature encouraging the user to touch and lift the dish," (Jorghensen 2000, 36). In this way, the designer wanted to "let the natural variation remain as a feature," (Jorghensen 2000, 37). This article combined with my own ideas and experiences in the studio led me to my conclusions about ways to include variation and alteration in my series of dinnerware and cups.

Alteration

My plan was to use moldmaking and slipcasting as my tools of production, yet try to find some way to humanize the process and the results. Through brainstorming and research, I found a myriad of ways that I thought would incorporate a handmade quality in the results of my castings. For instance, I could change the mold each time someway. I could use alternative molds that are changeable each time like paper, fabric or sand. An idea I found stated: "Forms not usually associated with mold making may help us to re-examine our concepts and ideas of molds. Sometimes these forming agents are more flexible and can be more easily altered in shape or modified than a plaster mold. For example, a paper, plastic, or fabric bag filled with sawdust, sand, or plastic granules, when it is being used as a mold, can easily be altered in shape to provide a great variety

of molded forms," (Cowley 1978, 88). I could swish the slip in an open mold. I could alter the slip chemistry each time for different effects. Some craftsmen make six slightly different molds of the same object to give the illusion of hand throwing each piece. Others throw a shape within a mold, making their hands a jig. Still others talk about using computer algorithms, yet I see no results. Conceivably, I could sculpt little feet for a handmade detail. Or join together different cast bits with an obvious joint. I could produce molded pots that are obvious and honest in their manufacture (with flash, etc.), or use computer modeling and CNC molding as an extension of doing things by hand. Maybe I would try to make the shape so innovative and difficult that I would have to use molds for speed of production. Or I could pressmold clay over a slump mold that is smooth on the inside and textured on the outside, or I could pressmold only into the female side. Perhaps I could simply cast the form, then shape it by hand.

My eventual decision was to cast each piece and then alter it with my hands. It is a simple technique, and yet it gives the maker so much room to play. The intent of all of this altering was to consciously give the pot some visual and tactile interest; interest that is not contained within wares that simply popped out of a mold and then promptly fired; interest that can only be given by the residue of hands. Formally, my pots were simple, but coupled with unique bulges, dents and fingerprints, they became more alive and engaging, rather than remaining stiff, bland and lifeless. By requiring this post production alteration, personalized attention is given to each piece and the maker is forced to include what I consider to be the best features of handmade ceramics: personality, character, flaws, warmth, quirks and idiosyncrasies. The alterations are easy-to-see signs that this pot was not machine manufactured.

Some critics may argue that this method of post-production alteration is a fake way of making an object handmade; that it only gives the pretense of being handmade. However, I would counter this by stating that according to the continuum concept explained before, *anything* made by my methods are much closer to the ideal of "handmade" than to the ideal of "mass-produced." Furthermore, my intention behind the alteration was not to make something mass-produced look handmade. The fact that the shape of each object was additionally influenced by a hand simply reiterates the inherent individuality of each piece while also giving each piece unique characteristics not usually

found in today's ceramic designs. Also, post-production alteration of the dinnerware pieces meant that I could make a variety of dinnerware lines out of the same three molds, related in shape, but different in hand alteration. Rather than being a fraudulent way of forging handmade pottery, my alteration was an excellent method of getting the most out of my molds while showcasing the character and distinctiveness of my handmade pots.

Preparation

After producing a variety of shapes on the wheel, the time came to choose which would become the basis for the plaster molds. The selection of these pieces was significant. As Richard Notkin put it: "avoid 'mold intoxication.' A mold is only as good as the aesthetic quality of the castings it produces: a poorly designed or aesthetically lacking work of art is never compensated for or validated by quantity production. In short, be critical before you make the mold," (Notkin 1978, 2). The first shapes to be chosen were the softened cones. I rationalized that they were worthy of being cast since their shape was so easily manipulated and adaptable. Furthermore, their conical shape mandated some post-casting hand shaping if they were to be used as functional cups. I began with two molds of this shape, and after deciding to make them a central component to the thesis, two additional molds were made. These four were simple one piece molds with a fairly sharp draft angle for maximum ease of use. After these, I chose the most simple and best looking bowl, plate, and luncheon plate to be reproduced for a double walled dinnerware line. I decided that due to the relative complexity of these pieces, I would make multiple pieced molds for these objects.

Finally, later in the course of the project, I tried a change in tactics which will be discussed later. For these cast-and-join shapes I made two different draining molds and four different one piece molds.

The Making of Molds

After making the simple one piece molds for the conical shape, I tried my hand at making a three piece mold for the bulbous bowl. The pattern I used was one of the solid pillow bowl prototypes I made on the wheel in a greenware state. Being completely self-taught in the field of mold making, I blindly went ahead and made a mold with no hole in

which to pour the slip, made out of plaster mixed using the "mountain" method. The mountain method is the style of plaster mixing frequently taught in art classes which involves having a bucket of warm water and sieving Plaster of Paris powder into it gradually until a peaked "mountain" of plaster appears in the center of the bucket. This method is appropriate for art and sculpture, but lacks the precision necessary for efficient casting of ceramics. The results from this mold were of unsurprisingly poor quality. It was at this point that I searched for knowledgeable help.

Visiting Artist Sinisa Kukec proved to be a wealth of information regarding plaster and moldmaking. After showing him my results and my mold, he carefully explained exactly how to make plaster molds for the production of ceramic pieces. First, he told me that plaster molds for ceramics must be made of carefully mixed plaster made from USG No. 1 Pottery Plaster brand of plaster mixed with water at a lukewarm temperature. Water that is too hot will cause the plaster to set prematurely and water too cool will make the plaster take longer to solidify. Kukec gave me his ratios for the correct amounts of water to plaster and informed me that this ratio is so important, I would need to measure out the plaster powder using a gram scale. For example, for one gallon of water, I would need eleven pounds of plaster or exactly 5,216 grams. Kukec also gave me the equation (LxWxH divided by 80 = quarts) to determine how much plaster I would need to make a mold, so that I would not begin pouring and find out that I did not have enough plaster. Then he outlined the correct procedure for making molds for production casting. He favored using plaster patterns with which one could make multiple identical molds, but having no plaster carving tools on hand or space I could dedicate to plaster dust, I kept to the ceramic patterns.

When it came to making the setup for the pouring of plaster over a pattern, my original methods were again close to correct, but not ideal. My impreciseness lay in finding the exact point on the pattern where the curve changes and where the two molds must meet. This is not an issue with one piece molds, but it is of great importance for multi-piece molds, because if the meeting of the two pieces is off, the pot will stick in the mold and tear when taken out. Also after seeing my results, he informed me about the importance of having an absolutely smooth clayed-up surface when pouring the plaster. Otherwise, the flashing on the cast pot will be large, obvious and chunky.

After learning some of the tricks of plaster and moldmaking, I was able to make significantly better molds. Once I understood how this material worked, I experimented by making more hollow molds and draining molds, intending both to be used with liquid slip, but these were ultimately used with throwing clay. Combined with my previously made "fill and pour" single piece molds for the softened cones, I managed to try the three most commonly used plaster molds. In total, over the course of ten weeks, I made four one piece molds of the softened cones, two useless three piece molds for two different pillow bowls, one three piece mold for the fatter pillow bowl, one two piece mold for the same bowl, one two-piece mold for dinner plates and one two-piece mold for luncheon plates. I also made five drain molds for the jointed vase concept. A professional mold maker stated that "the process of producing a large number of slipcast work demands a sufficient number of moulds," and yet "it is quite difficult for the studio potter to make the number of moulds necessary for large scale industrial production," (Arioka 2000, 24-25). These statements could certainly be said of the difficulty surrounding my early manufacturing of molds. However, now that I more aware of plaster pitfalls, I am sure that given enough time and enough personnel, I could now make sufficient molds for production.

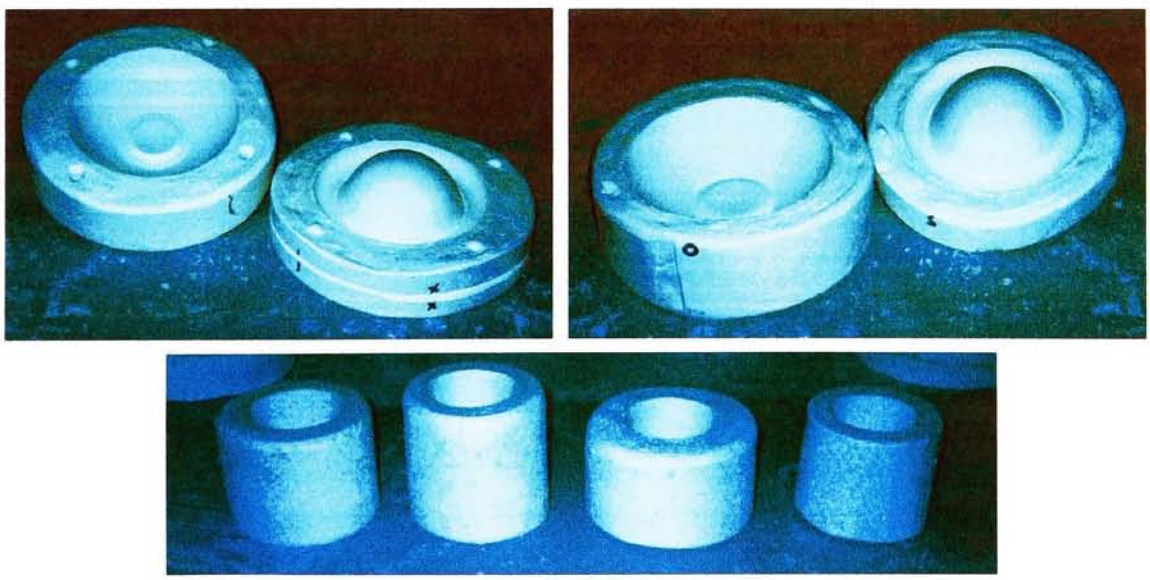

Fig. 19. Molds in Everyday Use

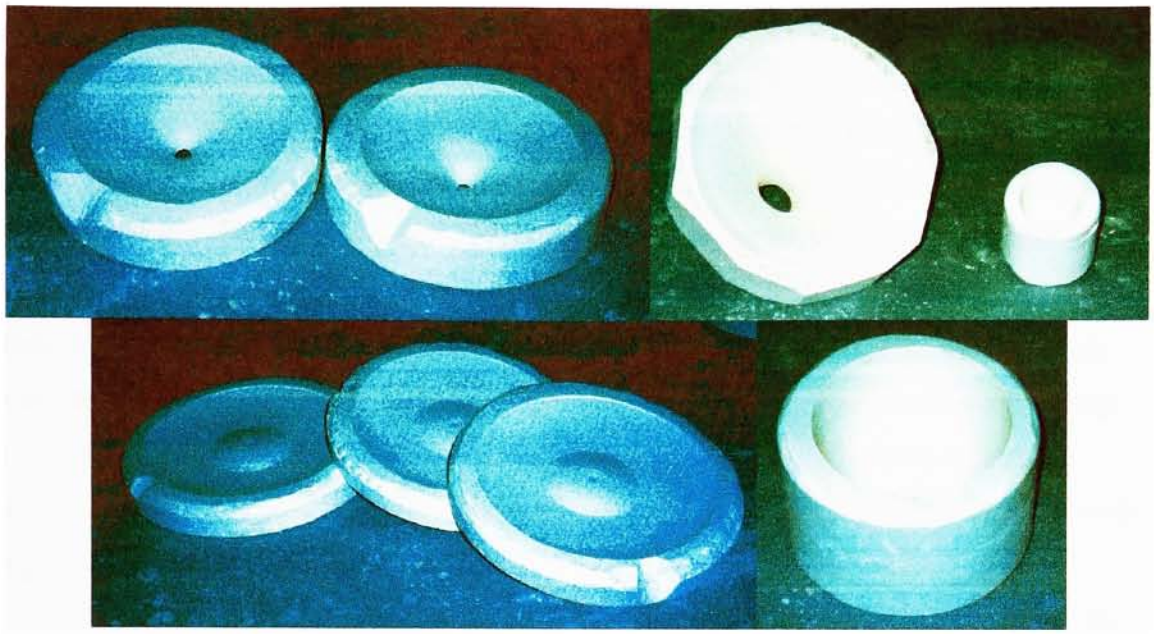

Fig. 20. Molds for the Abandoned Jointed Vase Concept

Fig. 21. Three Part Molds

Production Methods

Armed with this arsenal of molds, I began slip casting my shapes with the intent to follow the casting with hand manipulation. Slip casting the softened cones proved to be no problem. I filled the cone with Seeley's commercial cone 6 porcelain slip, experimented with the amount of time the slip was left in the mold before pouring it out, then poured the still liquid slip back into the jug and left the mold upside down and tilted to let every last unneeded drip of slip come out. Then, the slip form would release itself from the mold when it was sufficiently dry, and all I had to do was let the cone fall out, smooth the lip with a sponge, and alter it however I chose. This easy method of casting cones remained unchanged throughout the project. Depending on how wet the mold became after repeated castings, I could potentially make up to 32 cups in eight hours with my four molds with extremely little effort.

Producing large numbers of plates and bowls proved to be a bigger problem. As stated, I first began with two, three piece molds of two different bowls. For one, I would fill the mold through its hole located on the foot of the bowl, wait a certain length of time, and then pour out the excess slip. Then, through trial and error, I would wait another certain length of time and begin to try to dislodge the bowl from the mold. Due to the fact that drying slip will contract around a bulbous form like the male part of a bowl mold, I would attempt to take out the convex section of the mold first, then allow the rest of the mold to dry at its own pace. Even using this method, I continued to have problems with some parts of the cast bowl sticking to the mold while other parts were more than ready to come out. From Kukec, I learned that this was most likely because each of the three pieces of the mold had different rates of absorption depending on how I mixed the plaster, and because of this, different sections of the bowl would be ready to come out at different times. A uniform plaster mixing method would be the only way to remedy the problem.

Another problem I had with these two molds was that the shape of the bowl involved a bulbous lip and relatively thin wall. This shape meant that after I poured the slip into the mold and allowed walls to form, the wall of the bowl would become solid, trapping a donut of wet slip around the lip of the bowl. The only ways around that

problem were to either make a mold for a different shaped bowl or to pour out the slip very quickly, giving the bowl extremely thin walls.

Another three piece mold I made for a bowl had no hole in it for slip pouring. Therefore, I would pour some slip in each section of the open mold, quickly close up the mold, and proceed to try "rotational molding by hand" and roll the entire mold around until I thought the interior was covered. Obviously, this was problematic since I could not open the piece up to pour out the excess, leaving a puddle of thick slip somewhere in the piece.

Surprisingly, some bowls actually came out of these molds intact. The success rate was not high, but with the few that were produced, I was able to learn of another problem with my plan to slipcast pieces and then hand alter them: the inability of slip to withstand alteration after any drying. Every time I attempted to change the shape of the bowls after casting, when they were still in a seemingly alterable state, the walls would crack, crumble, and generally fall apart. I later learned that this was most likely because of the addition of gum to my store-bought slip. The gum gives the slip strength in its dry green state, but also makes the composition extremely brittle instead of plastic. All of these frustrations with slip led me to try pressmolding the bowls instead.

Pressmolding slabs of clay into molds by hand is not a technique used in industry, but is often used by craftsmen and in the MacKenzie-Childs factory. For me, pressmolding my dinnerware solved almost all of my problems, and worked equally well with my bowls and my plates. To do this, I would roll out a slab of my cone 6 throwing clay, trim it into appropriately sized circles, and drape the clay slabs over the open molds. While spinning each half of the mold on banding wheels, I would then gently press the clay into the shape of the mold using a wet sponge. Then I would trim off the excess clay from around the edge of the mold, score and slip the rims where the two halves will meet, and finally mount one half of the mold onto the other. After waiting the appropriate length of time, I would take the bowl off of the male half, preventing the bowl from contracting too much around that part. Then later I could lift the bowl out of the female side and alter it however I chose. Because of the more plastic makeup of the throwing clay and my familiarity with it, more alteration was possible with these pieces. This

process was the same for the two bowl molds and for the four plate molds and became the set way I produced my wares.

One obvious benefit of pressmolding over slipcasting was that I was able to actually fulfill my goal of altering uniform cast pieces. Another benefit was that I was able to make more pots off of the molds in a day since I did not need to let them dry very long between pressings. This added to my efficiency. Since it took thirty minutes to roll the slab and press the clay for each pot, another fifteen to thirty minutes for drying time and fifteen minutes of drying in front of a fan for the mold, my possible output for eight hours of production with one person and two molds was sixteen pots. It is important to remember that I was new to this production method. Over a period of a few more weeks or months, my production time would decrease with additional skill. Furthermore, if I were to make these bowls for production, I would have significantly more molds. This would mean that I would not have to wait for my molds to dry before making more bowls, thereby making this process truly productive. I would also have employees helping me to churn out more.

Concurrent with my practicing of pressmolding and altering dinnerware, I also attempted to produce a line of vases that would be cast in separate pieces and then joined together. The idea behind this was that I could have, say, three differently shaped molds for the bottoms for the vases, and three differently shaped molds for the tops of the vases. By joining the cast tops and bottoms in different combinations, these six molds could give me nine variations that could even be sold together as a matched set. On top of that, more variation would be possible through the different ways I could join the two halves of the vase. Some of the ideas that I wanted to try were more mechanical than the typical ways craftsmen join pieces of clay. These included piercing each half of the vase and then sewing the pieces together with threads of clay, tabs and flaps, rivets, like metal, classic and simple score, slip and smooth.

To make the molds for these pieces, I decided to try another type of mold- the draining mold. Similar in practice to the one piece mold for the softened cones, these one piece molds would be filled with slip. Then, instead of turning the mold over to pour the slip out (difficult due to the size of the molds), a plug in the bottom of the mold would simply be pulled out, allowing the slip to drain to a basin.

After making two molds for the tops and two for the bottom, I began casting shapes with slip. Soon enough I learned of yet another problem with my slip's brittleness and green strength: its inability to adhere when scored and slipped. Furthermore, most of the other methods I came up with to join up the pieces of the vases involved some sort of trauma to the piece that the brittle slip could not withstand. These problems, though not resolved in the time of the project, could have again just been a matter of the composition of my slip body. However, at the time of the production of work, with my efforts focused on designing and producing work, this problem was sufficiently large enough to make me stop this area of exploration and all efforts were returned to the production of the three different dinnerware and cup lines.

The three dinnerware lines and the three styles of cups came out of the same molds, but were each altered differently. Considering the difficulties of my commercial slip's problems with alteration and joining, I was unable to do as much with the softened cone molds as I had wanted. I had tried to attach bottoms to the cones and then cutting out a lid in the top, but the bottoms did not adhere. The one shape that did work well was the simple cup of which I made three different alteration styles in series: Dotty, Handled, and Lumpy. Dotty was a flattened cone shape, and was my first effort at making the pots look obviously like they have been shaped by hands. I strongly grasped the soft cones, squashed the tip of the cones against the table or a carved plaster board, then indented the bottoms in order to prevent re-rounding in the firings. This gave each cup a shape that showed exactly how and where to hold the cup. Then as a decorative feature to give the cups more interest, I dotted slip around each cup.

Fig. 22. The Dotty Cups

The Handy line was similarly squeezed and squashed, but then handles were added to them to make mugs. Because of the slip's characteristics, I attached the handles in a specific way. First, I pulled several handles out of my throwing clay, shaped them, covered their ends with plastic and left their curves to become leather hard. The plastic wetness of the ends was key since the next step was to insert the ends through two carved out holes in the cup and squash the ends flat against the interior, thereby making the handle unable to come back out and avoiding all of the issues I had with joining clay to the slip.

Fig. 23. The Handy Cups

For Lumpy, instead of squeezing each cup, I poked each cup from the inside, giving it bulbous extrusions. These lumps were then glazed turquoise on the interior to be even more obvious.

Fig. 24. The Lumpy Cups

The three styles of dinnerware alteration likewise showcased the use of hands. The original line of dinnerware was entitled Handy. Like the Dotty cups, this series involved grasping and squeezing each piece in a natural movement, as if you were offering the plate out to someone using two hands- thumb on top, fingers beneath. In this way, each piece offered the user an invitation to touch and hold.

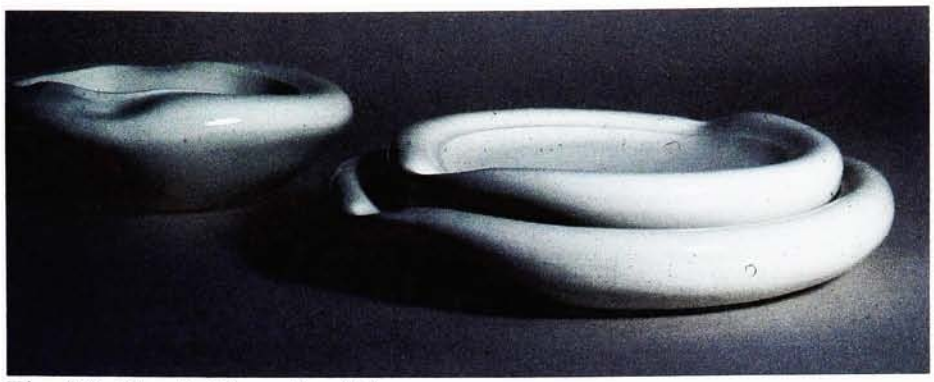

Fig. 25. Handy From the Side

Fig. 26. Handy as a Group

The Boating line was in response to the indentations of Handy. Instead of pushing hands into the bowls, I used my hands to stretch the pieces into ovular shapes, often just holding the pliable bowl vertically and allowing gravity to pull it into shape.

Fig. 27. Boating as a Group

Fig. 28. A Boating Place Setting

Squared was the final line and my foray into patterns. I came to this shape by simply experimenting, but I quickly saw that a plain square bowl was not very interesting. Then, I branched out and squashed the sides against different textured surfaces like fabric and the hole punched metal vent on the kiln. Eventually I decided to have more creative control in the pattern, so I carved my own patterns into a flat brick of plaster, giving the bowls and plates a raised relief texture of swirls and curlicues.

Fig. 29. Squared as a Group

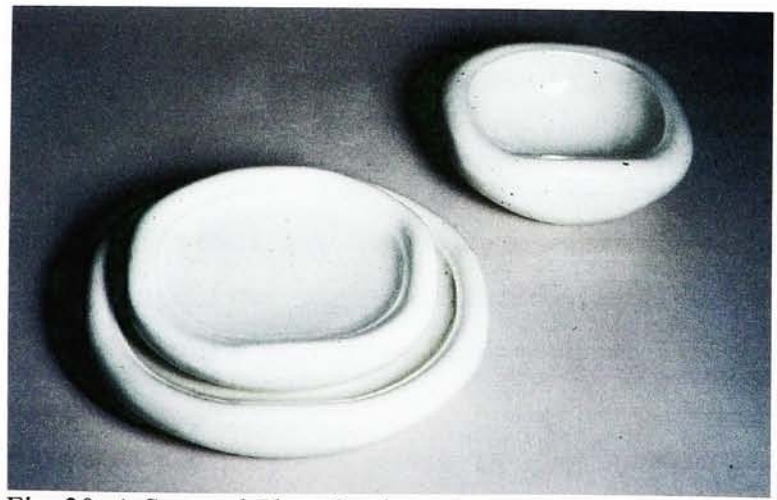

Fig. 30. A Squared Place Setting

Fig. 31. Detail of the carved plaster that gave Squared its pattern

After forming, all of the pots were bisque fired to cone 03. Then the pieces were glazed using commercial glazes. After a period of testing various colored glazes and various ways of application, I found one colored glaze that provided a nice counterpart to my otherwise stark whiteness: a matte turquoise which I painted on the handles of the mugs and on the interior bulbous shapes of Lumpy. Besides that, the pieces were glazed with some form of clear or white: Dotty had a satin-matte clear exterior and turquoise interior, the handled mugs were glossy clear except for their turquoise handles and Lumpy was matte white with turquoise accents. The dinnerware line Handy had a glossy clear eating surface and satin-matte clear rim and exterior, Boating had a matte white eating surface and glossy white rim and exterior, and Squared's entirety was glossy clear, with the patterned area lightly sponged with turquoise to bring out the texture.

Discoveries and Innovations

Throughout the course of experimenting and making all of the molds and pots, I had personal discoveries and innovations everyday. The most painfully learned lesson was that pressmolding is more suited for drastic alteration than slip. By the time slip is dry enough to come out of its mold, it is often too dry to withstand alteration. Pliable, plastic clay is key, and the slip I used was unfortunately too brittle. One of my next steps is to formulate my own slip that is tailored specifically to my needs and to experiment with the time for releasing.

Another revelation was that people working alone are not factories, and that slipcasting and pressmolding may not be faster than throwing shapes on the wheel for me. Making the dinnerware in my relatively labor intensive way of hand pressing the clay into the bowl molds will cause the prices for these pieces to be higher than I

expected. The cups were easy and fast to make, but the careful pressing and altering of the bowls and plates required significantly more effort. I am sure that with more practice and repetition, my speed would increase and help bring the ultimate price down. Another way to drive down the cost would be to employ inexpensive labor in the form of unskilled workers. Ultimately, pressmolding is better than slip casting since slip casting would demand even more molds. Pressmolding also wins out over wheel throwing since the technique for throwing bowls of such a shape would demand expensive skilled labor as well as require a comparable amount of production time since each piece would need to be trimmed in order to have a foot. So despite its difficulties and learning curve, pressmolding is the best technique for making the dinnerware.

I also had several revelations that would have impact beyond myself and my own little studio. One of these is the fact that there are plenty of points in the pressmolding and slipcasting processes that allow room for variation. More companies and designers should take advantage of this fact and produce more interesting wares. Obviously, adding a separate step of alteration is one way to further vary the styles of pieces that can come out of one mold, and doing the alteration using bare hands ensures subtle differences in each piece. My preferred way of requiring the step of alteration is to make a mold in such a shape so that alteration is necessary to make a functional piece. This was the case in the softened cones, which must be smashed to sit on a flat surface. However, as was documented in the chart of variation possibilities, there are many other areas where spontaneity can add character to factory produced wares.

. I also found that some mechanical joining processes, commonly used in the manufacturing of metals, work well with clay. Crimping tabs of clay around another piece was an effective way of joining clay and riveting was another successful joining method which I will use more often in the future.

Overall, my innovations in the process of slipcasting and pressmolding were subtle. Within any craftsman's process, there are tricks artisans find to make the object faster and/or better than one's competitors. Everyday I discovered ways to improve my process whether it was finding out that I did not have to reinforce my rims in order to join two halves together, or learning that keeping a dehumidifier reduced the drying times of my molds between uses. Interviewee Curt Benzle finds proprietary process techniques to

be one of the most important aspects of his business. In fact, he uses secret techniques in his work in order to deter copycats, making his goods difficult to duplicate. He actually admitted that when people ask him how he makes something, he has been known to lead the inquirer in the wrong direction in the hopes that he will be unable to reproduce the work. I have yet to discover such life-changing, patented and mysterious techniques within the processes of slip casting and pressmolding.

Instead, my most important innovations lie in the fact that I have successfully found my own method of combining the positive sides of mass production and of hand production in a way that produces innovative designs: the use of molds ensures a uniform basic form, and I have the idiosyncrasies of hand production and the benefits of different shapes made quickly. For this reason alone, I feel that the experience of this experiment has been legitimate and valuable to me. Furthermore, going through this process of production experimentation has shown me why there are divisions within the realm of ceramics in the first place. It was surprisingly difficult to find any production method to blend mass production and hand production. The most important reason for this divide is the great differences in speed of production between a machine and a craftsperson. Correspondingly, the cost of manufactured goods and handcrafted goods further delineates these two sectors in the marketplace and in the minds of the public. The only way to carve out a middle ground is to invent an ingenious production method. It is my belief that my method of casting a form that must be altered to be functional is an appropriate solution to the problem.

CHAPTER 5
MARKETING PROCESSES

Like every other part of this thesis, my marketing plan also aims to mix the successful aspects of mass produced ceramics and handmade crafts. Just like industry, the crux of becoming a lucrative craft business falls on effective marketing tactics in order to get your wares into the marketplace. To determine how to best sell my pieces, I researched the marketing of handmade crafts and interviewed artisans supporting themselves on making and selling pottery. After seeing how craftsmen go about making money from their work and generally bettering the whiteware market with more original work, I began to form my own plans and ideas for selling my simple cups and double walled dinnerware by also looking into the methods of industry. Now, everything from my target market and my pricing to my selling methods and promotional materials are planned and integrated into a cohesive marketing approach.

Traditional Distribution and Selling Methods

The traditional options for selling work are broken down into the following arenas: retail/craft fairs, wholesale shows, galleries and stores. Retail shows (also known as craft fairs or festivals) involve setting up a booth and selling mainly to individual customers passing by. These are the type of events one may see in local civic centers or set up along the sidewalks in quaint old parts of a city's downtown. In order for me to sell my work there, I would need to find out what is typically shown and sold at such events. If it is the type of show where rustic birdfeeders and dried flower arrangements are popular, then I would need to look elsewhere. The Crafts Report did a survey of craftsmen earlier this year in order to find out what marketing and selling efforts have been working for artisans. In this I found that "several artists are hoping to improve their profits by jurying into better retail shows," (Petzak and Finnerty 2003, 26). "Better retail shows" would be the ones more focused on the quality and uniqueness of the crafts selected to sell. One example of better retail shows are the American Craft Council (ACC) shows which are selectively juried. These shows are restricted to wholesale sales

the first two days, but are opened up to the public at the end for normal consumers to buy individual pieces.

Wholesale shows like the ACC are defined by the fact that gallery owners, storekeepers and collectors, all normally looking to buy in bulk, are the main consumers. However, like craft fairs and retail shows, wholesaling events are not without their fair share of problems. As craftsman Marcia Macdonald noted: "'It costs so much to do these shows (hotel, booth fees, food, airfare, etc.) you have to make over $3000 before you even start making a profit, and that isn't even including how much time, money and energy you put into the work in the first place,'" (Petzak and Finnerty 2003, 28). However, at these shows it is not uncommon for craftsmen to receive work orders and payment for their entire year (Benzle 2002). By receiving orders at a wholesale event, an artisan can conceivably go from being a hobbyist to a professional overnight. Examples of wholesale events which can yield high volumes of work orders include the ACC show in Baltimore, the Rosen Group event in Philadelphia and the New York Gift Show (Benzle 2002).

In order to be represented in a gallery or store, you can be picked up while showing at a wholesale event, by directly contacting the gallery, or if you are extremely fortunate, the gallery will contact you after seeing your work in an advertisement or at an exhibition. Selling your work in a gallery is similar to retail shows in that individual consumers are buying relatively small numbers of pieces, but the actual artisan is removed from the picture, detached from the business and salesmanship side of crafts. Using a rep is another way for craftsmen to get into retail establishments, although the consensus seems to be against using them. As Benzle explains, most reps will take 10 to 15% of wholesale costs, which requires craftsmen to run an extremely tight operation with little room for errors or market fluctuations (Benzle 2002).

Alternative Selling and Distribution Methods

A marketing mix of these traditional efforts and forays into new methods and markets seems to be what works the best for most craftsmen. Newer marketing methods include selling and showing on the internet, direct marketing to galleries and previous customers, and intensive advertising, as well as finding and reaching out to alternative

niche markets. A variety of rationales are given for these changes, but Craftsman Kem Maher states simply, "'we are moving from trade shows to selling via direct mail and the Internet [because] at this point, trade shows, showrooms and reps are no longer worth what we invest in them,'" (Petzak and Finnerty 2003, 28). As was reported in The Crafts Report, Zero Gravity Glass succeeds by using a marketing mix that "combines wholesale shows, a Web site, advertising, and cold calling [galleries and stores,]" (Petzak and Finnerty 2003, 28). The proprietor reports that "'we advertise on the Web and in magazines, and our 60-plus-page Web site helps a lot. We e-mail JPEG's of new work, price sheets, etc., to current and prospective accounts,'" (Petzak and Finnerty 2003, 28). Others have also found that focused marketing efforts are paying off. "'I am now trying to do more direct marketing, i.e. mailings and cold calls, to those galleries that continue to show higher-end crafts,'" Steven Bronstein declares, "'I have a Web site and an now seeing buyers begin to use the Web,'" (Petzak and Finnerty 2003, 29).

Ceramist Curt Benzle believes that craftsmen must research and make the effort to go to the undiscovered markets. After a twenty year selling career, he has found that the group going to wholesale shows and crafts fairs is a narrow group of consumers; he sells to the same people over and over again, which puts his livelihood in the hands of a few. Benzle has diversified by selling his products on the cable shopping network QVC, to the chagrin of elitist craft gallery owners, and in fact did quite well by reaching out to a new market. The work he sold there was more generic, but his theory is that the public at large must first learn about ceramics in order to buy, and they have to start somewhere. In order to expand the market that is willing to buy handmade ceramics, he has expanded his marketing efforts and increased his advertising. Specifically, he has built up a mailing list from people at shows to which he can mail out catalogs, as has many other craftsmen, and he advertises in trade publications like The Crafts Report, niche magazines, buyer directories and with regional groups such as the Ohio Designer Craftsmen. Ultimately he believes that it is lack of awareness, not price, that keeps potential customers away. (Benzle 2002).

Marketing Plan

With this information and the following additional research, I began to carve out a plan for myself. As is done in marketing classes and textbooks, I broke my plan into distinct yet related segments: target market, pricing, selling and distribution, and promotional materials.

Target Market

The public that I am aiming for, as stated in the introduction, is the mid twenties to mid thirties age bracket. The rationale for this was that this would be the time in peoples' lives when they get married and set up their own households. Originally, the plan was to target the entire age bracket regardless of socio-economic standing, much like mass-market retailers like IKEA and Target. However, after analyzing the situation further and determining the retail cost of the pieces (as shown in the next page), I decided that college educated, professional persons in their twenties and thirties would most likely be willing to buy dinnerware at such prices. Narrowing the market even further was the realization that women are the primary purchasers of dinnerware, whether for themselves or their own household, or as gifts.

This market segment does not necessarily want the typical flowery pattered dinnerware as made by Pfaltzgraf, or needless and expensive china from Lenox and Mikasa. Instead, they might prefer dinnerware more attuned to their tastes and possible interest in design. As it so happens, this age group is the most likely to buy casual dinnerware, like the kind produced in this thesis. As stated in American Demographics, "[y]oung householders setting up their first home are the most likely to have bought casual tabletop pieces," (Fetto 2003, 11). In fact 43% of households comprising of 25 to 34 year olds bought casual dinnerware in the past year. The article also states that according to the president of one marketing group, "'[tabletop consumers] look at fine bone china plates . . . as an anachronism, a remnant of a long-lost time. For today's homemaker . . . dinnerware must go from oven to table to dishwasher and still be pretty enough to display on the shelf," (Fetto 2003, 11). The designs from this project reach out and fulfill this market's desires.

Pricing

For people just starting out, money is most likely tight. That is why the low cost of these products was so important throughout this project. After all, it is illogical to design for consumers who cannot afford high end work. Furthermore, lower priced items appear to many craftspeople to be the best sellers, or the "bread-and-butter" of their business. As was stated by artisan Jay Palefsky, "'We have found that the less expensive items, under $60, were ordered in larger quantities,'" (Petzak and Finnerty 2003, 29). When times get tough, one craftsman's plan of action was to "'work on more lower-end products'" (Petzak and Finnerty 2003, 26). But obviously, it is important to figure out if you are pricing your products so low as to not make a profit. Theoretically supporting myself financially was another key part of this exploration. Curt Benzle sees pricing as a combination of your necessary base price, plus however much the market will withstand, which is somewhat of a trial and error exercise. By ascertaining the material cost of each pot, combined with overhead and energy costs for having the space to make and fire the work, and added to my rate of pay for making the pots, I was able to determine the lowest price at which I can recoup my expenditures and efforts.

	Cups	Dinnerware
Clay material used (moist clay or slip):	$40.20	$55.30
Energy costs for total required firings:	50	75
Approx. glaze used:	25	53
Plaster for making molds:	13	13
Studio rental for 1 month:	100	100
Total:	$228.20	$296.30
Divided by total finished pieces:	78	57
Equals the minimum price to recoup materials and overhead:	$2.93	$5.20

Fig. 32. Breakdown of Money Spent

Understandably, considering the effort involved in making them, the slipcast cups are the cheapest pieces. The raw materials and overhead divided between each finished cup comes to $2.93 per cup. Unfortunately, this does not include any sort of compensation for time spent actually making the cups (and for simplification, I am not charging the public for time spent designing the cups, making the molds and generally experimenting). In order to make these 78 finished cups, it took 30 hours of pouring slip, waiting for it to dry, finishing the cups, glazing them, and loading them into the kiln. These were not all particularly intensive hours spent actively watching the slip dry, but they were hours spent in the studio doing a job. If allow myself to be paid $10 an hour for my efforts, this would raise the base price of each cup to $6.78. Another consideration to enter into pricing is how and where the pieces would be sold. If I were to enter a show like the ACC, I would also need to include the price of booth rental, exhibiting material, and travel costs, totaling around an additional $3000. Issues like this will be further explored in the Selling and Distribution section.

The dinnerware line must include significantly more hours which were intensely focused on making the wares. The base price for overhead and materials was $5.20 for each piece. If I include all of the effort of making each piece, which took about one hour per plate or bowl, that would bring the minimum selling price to $15.20 (using the $10/hour rate of pay).

Selling and Distribution

However, it would be pointless to determine the appropriate audience and pricing strategies without figuring out the distribution methods that will be used to reach them. Through discussions with experts and marketing research, I determined the best ways to get the wares I made into the appropriate marketplace. After showing Curt Benzle my work, it was his belief that I should start out by approaching stores, doing carefully selected retail shows and attempt to get into one of the more prestigious wholesale events. Wholesale exhibitions would be an good start, if I had enough money to invest in such activities. The only thing I have a lot of is time. Time that I can spend set up a web site and doing direct marketing by cold calling and sending out brochures to every store

or gallery that would be a good fit. I even thought about sending out free samples to influential magazines and especially sought-after stores, like larger companies do when they have a new product. I will also attend as many inexpensive retail shows as possible to see how that works. I plan to go as far as possible with the alternative modes of selling and marketing until I either raise the capital to go to a wholesale show or decide to simply continue selling direct from my studio, thereby keeping the price low and costs down.

Promotional Materials

In designing appropriate promotional materials, it was very important to me have a unified and professional style. Something that would communicate to the public the same sense of playfulness, femininity and modernity that exuded from my pieces.

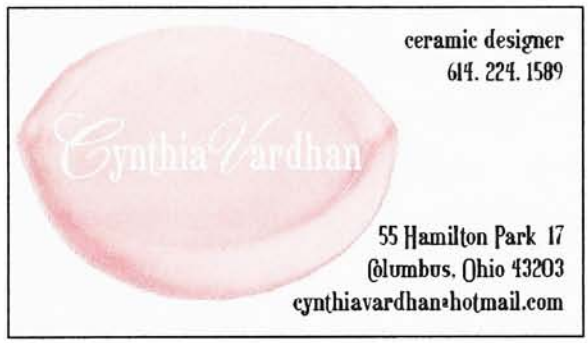

Fig. 33. Business Card

Fig. 34. Label for Bags and Boxes

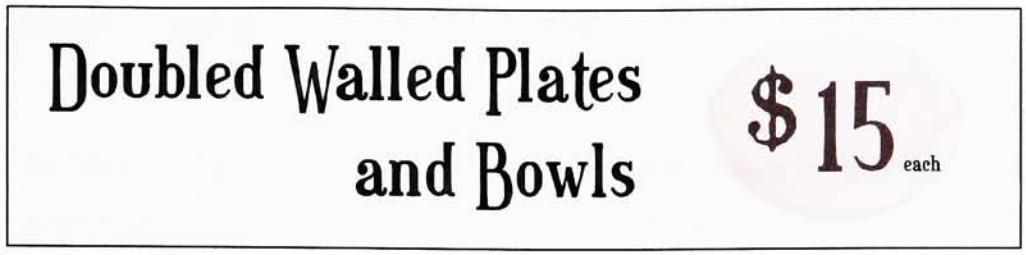

Fig. 35. Signage

Conclusion

I had the opportunity to put this planning to the test by reserving a booth at the Student and Faculty Art Sale and Columbus College of Art and Design. There I was the only participant that seemed to put any thought into presentation and professionalism. I am pleased to report that every single handled cup (even the ugly experiments) sold, as well as the entire Dotty series. However, it is worth noting that desire several positive consumer comments, I am still the owner of all Lumpy cups. The dinnerware lines also sold in an interesting fashion. Instead of picking bowls and plates that matched, customers would put Boating bowls with Offering plates and vice versa. Again, like the cups, the experimental, one-off bowls sold out entirely. I owe this to the fact that the customers coming to this event were expecting original, one of a kind work and not an dinnerware set (although one man did buy four bowls and four luncheon plates of Offering).

The most rewarding parts of the sale were the comments from customers, especially the ones about how they had never seen such shapes before. I thought to myself, "Well, yes, that was the whole point."

CHAPTER 6
CONCLUSION

Industrial Uses

As I described previously, I do firmly believe that the points brought up in this project could have an effect in the dinnerware industry. However, the company to begin making more personable pottery would have to be extremely open-minded. There was one article I found in my research about how one company was attempting to get manufacturers to produce the wares designed (and licensed) by potters. The potters "Hinchcliffe and Barber wanted to integrate their design ideas with the sophisticated production capabilities of industry," and to try to "tease out a new relationship between small studio and large-scale commercial factory," (Olding 2000, 20). Olding explains that by "operating a middle course they risked the opprobrium of both camps- being too commercial for the purist studio potter on the one hand and too 'creative' for industry." (2000, 20). Furthermore, "given the decline in the commercial UK based ceramics industry, the role of the 'studio-industrial' practice has an even more important role to play in defining and leading artistic standards on domestic ceramics," (Olding 2000, 21). Concurring with this belief is a ceramic designer who wrote, "Designing pots for hotels and restaurants presents new and exciting opportunities when exploring the huge potential in combining the aesthetic sensitivity of studio/craft pottery with the efficiency of industrial manufacturing methods," (Jorghensen 2000, 38). Furthermore, this desire for craft/industry cooperation has surfaced before. Twenty years ago, Jan Axel wrote that "artists have clearly reaped benefits from the factory experience, but they must reciprocate by lending their aesthetic attitudes and technical knowledge to industry if real progress is to be made," (Axel 1981, 175).

Future Explorations

Many times throughout this project, ideas, processes and problems came up which I could not pursue. The first idea which could be further researched in the future is the question "Why do companies and designers *not* include any handmade elements in their production lines?" In all of the research I found about ceramics, this question was never addressed. Another avenue which could be pursued is using the RAM press machine in

producing handmade wares. Is there any way to insert some unpredictability into such an exact process? It would be faster than pressmolding, but without some changes to the process, the results are too uniform. Another issue to address is slip chemistry. After some post-production conversations, I believe that the aborted joined vase concept could be realized if I formulate my own slip recipe. Such a process would involve lots of testing, but making an use-appropriate slip would be very beneficial for future progress in this field.

Plans and Analysis

In industry, "it is necessary to build what the customers will buy" since there are whole factories of people financially dependent on whether the item will be successful (McDevitt 1964, 11). People from industry also site the cost of tools when justifying their need to produce banal products that will appeal to a mass audience (McDevitt 1964, 11). However, if the production process and the company are small, efficient and inexpensive, then theoretically, the company is better able to produce innovative or experimental products. That is why I never see Cynthia Vardhan Ceramics becoming any more than a two or three person operation. Furthermore, I found that "at industrial potteries a time scale of several years between a new shape design and a finished piece is normal," (Jorghensen 2000, 37). This lag is all the more reason to keep any bureaucracy down to a minimum.

Ultimately, what I got out of this project was a clearer understanding of the divisions already in place within the field of ceramics. Although the handmade-to-mass-produced continuum is a fact, different points on the line have their own particular qualities that may or may not be combinable with others. Factories are better places for businessmen than potters; the craftsmen who churn out identical plates and mugs and bowls are of a different breed than those artists who make truly unique pieces that are shown more appropriately in galleries than in craft stores. After getting in and trying to mix things up, the rationale behind the status quo became abundantly clear. In the end, things might just be fine the way they are.

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